

January 22, 2004

To: Commissioner for Patents  
P.O.Box 1450  
Alexandria, VA 22313-1450

Fr: George O. Saile, Reg. No. 19,572  
28 Davis Avenue  
Poughkeepsie, N.Y. 12603

Subject: | Serial No. 10/706,382 11/12/03 |  
Wen-Jui Fu et al.

A NOVEL METHOD TO REDUCE THE  
FLUORINE CONTAMINATION ON THE  
AL/AL-CU PAD BY A POST HIGH CATHODE  
TEMPERATURE PLASMA TREATMENT

#### INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation  
In An Application.

The following Patents and/or Publications are submitted to  
comply with the duty of disclosure under CFR 1.97-1.99 and  
37 CFR 1.56.

#### CERTIFICATE OF MAILING

I hereby certify that this correspondence is being  
deposited with the United States Postal Service as first class  
mail in an envelope addressed to: Commissioner for Patents,  
P.O. Box 1450, Alexandria, VA 22313-1450, on January 27, 2004.

Stephen B. Ackerman, Reg.# 37761

Signature/Date

A handwritten signature of "Stephen B. Ackerman" is written over the date "1/27/04".

U.S. Patent 6,162,733 to Obeng, "Method for Removing Contaminants from Integrated Circuits," teaches a method to remove alkali metal and halogen-based contaminants from an integrated circuit device.

U.S. Patent 6,063,207 to Yu et al., "Surface Treatment for Bonding Pad," discloses etching a bonding pad opening using a fluorine based plasma.

U.S. Patent 5,824,234 to Jou et al., "Method for Forming Low Contact Resistance Bonding Pad," describes a bonding pad method.

U.S. Patent 5,380,401 to Jones et al., "Method to Remove Fluorine Residues from Bond Pads," teaches a method to remove fluorine contamination from bonding pads.

U.S. Patent 5,970,376 to Chen, "Post Via Etch Plasma Treatment Method for Forming with Attenuated Lateral Etching a Residue Free Via Through a Silsequioxane Spin-On-Glass (SOG) Dielectric Layer," discloses a method to remove a fluorocarbon polymer from a wafer surface using an inert gas plasma.

U.S. Patent 5,755,891 to Lo et al., "Method for Post-etching of Metal Patterns," discloses a method to treat after metal etch.

U.S. Patent 5,770,098 to Araki et al., "Etching Process," describes a plasma etching process.

U.S. Patent 5,942,446 to Chen et al., "Fluorocarbon Polymer Layer Deposition Predominant Pre-Etch Plasma Etch Method for Forming Patterned Silicon Containing Dielectric Layer," discloses a method of patterning a silicon-containing layer using plasma etching.

U.S. Patent 5,776,832 to Hsieh et al., "Anti-corrosion Etch Process for Etching Metal Interconnections Extending Over and Within Contact Openings," teaches a method to prevent corrosion of metal lines by performing an O<sub>2</sub> ashing step after etching metal lines with BC<sub>13</sub> or with Cl<sub>2</sub>.

U.S. Patent 6,136,680 to Lai et al., "Methods to Improve Copper-fluorinated Silica Glass Interconnects," describes methods to process fluorinated silicate glass (FSG) film by performing plasma treatments using N<sub>2</sub>, NH<sub>3</sub>, O<sub>2</sub>, or N<sub>2</sub>O or by performing Ar sputtering.

U.S. Patent 5,854,134 to Lan et al., "Passivation Layer for a Metal Film to Prevent Metal Corrosion," teaches performing a plasma treatment on a metal layer using a fluorine containing plasma to thereby form a thin polymeric passivation layer on the metal.

TSMC-99-431/909

U.S. Patent 5,731,243 to Peng et al., "Method of Cleaning Residue on a Semiconductor Wafer Bonding Pad," discloses a method to remove residue from a bonding pad using a dip in a solution comprising DMDO and MEA followed by an oxygen plasma treatment.

Sincerely,



Stephen B. Ackerman,  
Reg. No. 37761

Form PTO-1449

Document Number (Optional)

TS MC-99-431/909

Application Number

10/706, 382

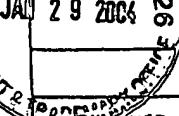
Applicant

Wen-Jui Fu et al.

Filing Date

11/12/03

Group Number


**1 P A** INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

JAN 29 2004

(Use several sheets if necessary)

## U. S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	PLACING DATE IF APPROPRIATE
	6162733	12/19/00	Obeng	438	706	1/15/99
	60632075	16/00	Yu et al.	134	2	2/1/99
	5824234	10/20/98	Jou et al.	216	18	10/2/98
	5380401	1/10/95	Jones et al.	156	665	1/14/93
	5970376	10/19/99	Chen	438	637	12/29/97
	5755891	5/26/98	Lo et al.	134	1.2	1/24/97
	57700986	6/23/98	Araki et al.	216	67	3/16/94
	59424468	24/99	Chen et al.	438	734	9/12/97
	57768327	7/7/98	Hsieh et al.	438	669	7/17/96
	6136680	10/24/00	Lai et al.	438	597	1/21/00
	5854134	12/29/98	Lan et al.	438	695	5/15/97

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO

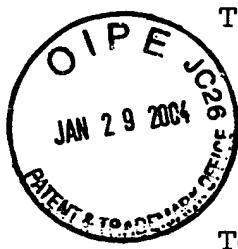
## OTHER DOCUMENTS (Including Author, Title, Date, Page No., Etc.)


EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

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ASSOCIATE POWER OF ATTORNEY

I hereby appoint Doug Schnabel, registration number 47,927, as my associate attorney in this case. His telephone number is (517) 686-3462.

Please continue to direct all correspondence in this case to the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "SBA".  
Stephen B. Ackerman,

Principal attorney of record